

Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10. (Canceled)

11. (New) A light emitting diode device,
comprising:

a substrate deposited on a bottom of the light emitting diode device;

a semiconductor layer formed above the substrate including an n-type semiconductor layer, an active layer and a p-type semiconductor layer, wherein the active layer is formed between the n-type semiconductor layer and the p-type semiconductor layer;

a matrix-lines layer formed on the p-type semiconductor layer, wherein the matrix-lines layer is divided into a plurality of regions for providing uniformly spreading current on the light emitting diode device; and

a light-transmission conductive layer that is an oxide layer filled on the matrix-lines layer so as to effectively increase optical transmission of the light emitting diode device;

wherein an occupied area of the matrix-lines layer follows a formula

$$a < (1 - T_T/T_I)A$$

where a is the matrix-lines layer occupied area,
 A is the area of the light emitting diode,
 T_T is the transparency of the matrix-lines layer, and
 T_I is the transparency of the light-transmission
conductive layer.

12. (New) The light emitting diode device of claim 11, wherein the substrate is a sapphire substrate.

13. (New) The light emitting diode device of claim 11, wherein the n-type semiconductor is an N-GaN layer.

14. (New) The light emitting diode device of claim 11, wherein the p-type semiconductor layer is a P-GaN layer.

15. (New) The light emitting diode device of claim 11, wherein the active layer is an InGaN/GaN multiple quantum well structure.

16. (New) The light emitting diode device of claim 11, wherein the light-transmission conductive layer is a metal-oxide layer.

17. (New) The light emitting diode device of claim 11, wherein the patterned transparent conductive layer is made of at least one metal selected from a group consisting of Ni, Au, Cr, Ir, Pt, Ag, Ru and Be.

18. (New) The light emitting diode device of claim 11, wherein the light-transmission conductive layer with high transparency is an oxide layer selected from the group consisting of indium tin oxide (ITO), indium oxide, tin oxide, indium lead oxide, lead oxide, antimony tin oxide, antimony oxide, antimony zinc oxide, cadmium tin oxide, cadmium oxide, zinc oxide, and magnesium oxide.

19. (New) A light emitting diode manufacturing method, comprising:

forming a substrate on a bottom of the light emitting diode device;

forming a semiconductor layer above the substrate including an n-type semiconductor layer, an active layer and a p-type semiconductor layer, wherein the active layer is formed between the n-type semiconductor layer and p-type semiconductor layer;

forming a patterned transparent conductive layer on the p-type semiconductor layer; and

forming a light-transmission conductive layer
overlaying the patterned transparent conductive layer;

wherein an occupied area of the patterned
transparent conductive layer follows a formula

$$a < (1 - T_T / T_I) A$$

where a is the patterned transparent conductive
layer occupied area,

A is the area of the light emitting diode,

T_T is the transparency of the patterned transparent
conductive layer, and

T_I is the transparency of the light-transmission
conductive layer.

20. (New) A light emitting diode device,
comprising:

a substrate deposited on a bottom of the light
emitting diode device;

a semiconductor layer formed above the substrate and
including an n-type semiconductor layer, an active layer and a
p-type semiconductor layer, wherein the active layer is formed
between the n-type semiconductor layer and the p-type
semiconductor layer;

a patterned reflection layer formed on the p-type
semiconductor layer;

a patterned transparent conductive layer formed on the patterned reflection layer; and

a light-transmission conductive layer overlying a hybrid of the patterned transparent conductive layer and the patterned reflection layer;

wherein the patterned reflection layer reflects light absorbed by the patterned transparent conductive layer so as to increase illumination of the light emitting diode device.